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**THREE CASES OF ATTIC SUPPURATION IN
WHICH OPERATION WAS FOLLOWED
BY FACIAL PARALYSIS (BELL'S
PALSY.)¹**

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I WISH to report three cases of upper tympanic or attic suppuration, in which operation was followed by facial paralysis, for the purpose of learning from those of larger experience in this very important branch of surgery, how far it is possible to avoid this complication which, owing to the anatomy of these parts, is unquestionably a condition that is likely to occur. By reviewing our anatomy of this region of the middle ear we find it marked off at about its middle by the bony ridge which forms the covering of the facial nerve, or, indeed, the nerve may pass through this region entirely devoid of any bony covering. It will, therefore, be seen that nothing but the greatest care could possibly prevent wounding this important structure, or if the bony covering be present and carious, its removal cannot be accomplished without seriously interfering with the nerve. Another problem which my limited experience has not afforded me an opportunity of solving is whether the condition would be less likely to occur if the posterior operation (of Stacke) be employed instead of the operation through the canal, the latter being the method that

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I have employed in each case. The patients were all treated by thorough cleansing, both by means of the cotton applicator and with the post-tympanic syringe, as far as it was possible and as long as I felt it was wise to continue it. The results obtained, in so far as the supuration was concerned in each case, I think justify the operative procedure.

CASE I.—Mr. L., thirty-two years of age, first consulted me April, 1893, when he gave a history of supuration of the left ear for twenty-two years; suppuration from the right side had lasted but a few months, while on the left side it had been persistent during the entire period; he had been treated at intervals, though without in any way affecting the condition. The examination when I first saw him showed in the right ear a depressed cicatrix in the lower anterior portion of the membrane and some general thickening; on the left side there was a fetid discharge from the canal, which on removal showed considerable destruction of the upper wall, and the bent probe readily passed into the attic region; the hearing for whisper-sounds was on the left side, one foot, on the right, about six feet; the tuning-fork gave R. upon both sides; the patient complained of a fulness and some aching and tinnitus. The treatment, which was continued from three times to twice a week, from April until September, consisted of thorough cleansing, both by means of the cotton-carrier and hydrogen dioxid, and syringing with hot water carried well up into the cavity, and then followed by dusting the canal with borated powder. The naso-pharynx was also treated each time the ear was treated. While this treatment served to greatly lessen both the fetor and the amount of discharge, the latter at no time entirely ceased, there being at each visit some suppuration from that region. The operation consisted of removing what remained of the membrane, malleus, and incus, the head of the malleus being lost and also a large part

of the body of the incus ; the cavity was then thoroughly curetted and part of the upper, posterior portion of the roof of the canal was carefully chiselled away ; the whole cavity was then thoroughly washed out with a hot saturated solution of boric acid, and dusted with aristol, and the canal closed with a cotton pledget. Thirty-six hours after the operation, a marked paralysis was noted of the entire left side of the face, including the eyelids and brow, which fortunately subsided in six weeks. The suppuration had entirely ceased in eight weeks. The patient has reported to me once a month, and I have been gratified to find that the good results still continue.

CASE II.—Miss K. McN., twenty years old, has had suppuration on the right side for fourteen years ; she has no recollection of having had suppuration on the left side, though a lower, anterior cicatrix clearly proves the contrary ; the condition followed scarlet fever. When she consulted me on June 12, 1893, I found the canal partially filled with desiccated pus, removal of which brought to view an attic filled with granulation-tissue, the removal of which left the malleus-head bare. This case was treated in the routine way described until the latter part of September, when the operation was performed. The membrane, malleus, and incus were removed ; the malleus was apparently not carious, while a large portion of the body of the incus was lost ; the entire cavity was then thoroughly curetted and treated as in the foregoing case ; paralysis here appeared on the third day after the operation and continued for about seven weeks ; the discharge had entirely ceased by the end of the tenth week, and the cavity is perfectly well at the present time. The examination of the membrane within a month past shows a perfectly healthy cicatrix. The hearing, which was very deficient, was not in any way improved, though she thought the tinnitus, which was very marked, was somewhat improved.

CASE III.—Mrs. Le C., thirty-four years of age, has

had suppuration from the left ear for thirteen years. When I saw her first, about one and a half years ago, there was free fetid discharge, which was more profuse in this case than is usually found in cases of attic suppuration; the bent probe passed well up into the attic, and the cleansing brought down large quantities of necrotic tissue, black and very fetid; the tuning-fork gave R.; the hearing was very good, a whisper being heard at four feet; she complained of vertigo and tinnitus, the former being so great that treatment by syringing was extremely difficult to carry out. After having treated the woman for a year and more without benefiting her to any great extent—indeed, if she went longer than a week without cleansing, the discharge would become as profuse and fetid as when I first saw her; the operation was performed November 2, 1893. In addition to removal of the malleus, the head of which was almost entirely destroyed, a portion of the posterior part of the roof of the canal was chiselled away, and what remained of the membrane was excised; the incus could not be found, and was probably destroyed; paralysis was noted in this case before she had recovered from the anesthetic; it was indeed complete. The suppuration had entirely ceased by January, though for a month previous to that time it had only been sufficient in amount to harden the powder that had been blown into the canal. The paralysis in this case has been persistent, and while it is at present showing evidence of subsiding, it will, I fear, be some time before it is completely relieved; the vertigo following the operation was also a very annoying symptom, and continued for two weeks; there was, however, but slight elevation of temperature. The case is now under treatment at the University Hospital, at the hands of Dr. Potts, the electrician, who has kindly furnished me notes as to the muscular reactions, his opinion being that the nerve was not severed, but that it had been greatly irritated, probably by the pressure of a spicula of bone against it.

ELECTRICIAN'S NOTES.—The muscles did not respond to the faradic current, but did to a moderate galvanic current (about 6 to 8 milliampères). Qualitative reactions were present, the muscles responding in the peculiar slow manner characteristic of degenerated muscles and the A C C was about equal to K C C. Owing to the fact that the muscles exhibited K C C of about equal strength to that of A C C six weeks after reception of injury, we were led to assume that the nerve had not been seriously injured and to give a good prognosis. Normal reactions have returned in some of the muscles—now something over two months since treatment was begun.

In none of the cases was there any perceptible change in the hearing. There was, however, apparently some lessening of the tinnitus in Case II, and absolute relief from the vertigo in the last case. In all, the discharge was stopped, and it is reasonable to believe cured, though I am not prepared to claim this latter fact absolutely. It is my opinion that the want of proper drainage is the sole cause for the persistence in attic suppuration, as we know that drainage through the tube is usually cut off by the inflammatory adhesions within the middle-ear cavity, and thereby leaving the attic region entirely without any drainage. It would, therefore, seem to be good surgery to remove all obstructions, even though so annoying a condition as paralysis may follow.

